

A METHOD AND SYSTEM FOR DYNAMIC POWER SUPPLY VOLTAGE
ADJUSTMENT FOR A SEMICONDUCTOR INTEGRATED CIRCUIT
DEVICE

5 ABSTRACT OF THE DISCLOSURE

A processor power supply voltage controller for throttling a processor's (e.g., CPU, GPU, DSP) power supply voltage with respect to a temperature.

The controller includes a temperature sensor configured to sense a temperature of a processor and generate a temperature signal in accordance

- 10 therewith. A regulator is coupled to the processor to provide a power supply voltage to the processor. The regulator is also coupled to receive the temperature signal from the temperature sensor and control the power supply voltage in accordance with the temperature signal to maintain a stable performance of the processor. The temperature sensor can be implemented as
15 a negative temperature coefficient resistor coupled to sense the thermal environment of the processor (e.g., heat sink temperature, processor die temperature, PCB temperature, ambient temperature in an enclosure, etc.).
The temperature signal can be implemented by using the temperature sensor to control a feedback circuit coupled to the regulator.

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